DOCUMENT RESUME

ED 349 892 HE 025 811

| | |
|---|---|
| AUTHOR | Cole, Karen |
| TITLE | Doctoral Students in Education and Factors Related to the Literature Review Process. |
| PUB DATE | Jan 92 |
| NOTE | 122p.; Master's Thesis, Fort Hays State University. |
| PUB TYPE | Dissertations/Theses - Masters Theses (042) |
| EDRS PRICE | MF01/PC05 Plus Postage. |
| DESCRIPTORS | Bibliographic Databases; Bibliographic Utilities; Bibliographies; *Graduate Students; Graduate Study; Graduate Surveys; Higher Education; Indexes; *Literature Reviews; Online Systems; Research Methodology; Sex Differences; Student Attitudes; Telephone Surveys; *Users (Information); User Satisfaction (Information) |

ABSTRACT

As part of graduate work for a specialist in education degree, this study examined the literature review process of doctoral students in education at the University of Kansas (UK) and Kansas State University (KSU) examining several student variables. In particular the study sought to clarify the response of students to the variety of bibliographic tools now available to the researcher. The independent variables were gender, program of study, university attended, masters thesis written, years between completion of a masters program and commencement of the doctoral program, and campus residency while engaged in the review of the literature process. The sample consisted of 61 doctoral students, 35 from KSU and 26 from UK who were mailed surveys which they then answered via telephone interviews. Significant main effects were years between masters and doctoral program and using electronic indices and gender and having someone other than the subject complete a computer search. Results appeared to suggest that there is an association between gender and having someone else complete a search and that there is an association between years between completion of a Masters degree and commencement of a doctoral program and using electronic indices. Included are 35 tables, appendixes containing the study instruments, and 23 references. (JB)

**********
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
**********

ED349892

# DOCTORAL STUDENTS IN EDUCATION AND FACTORS RELATED TO THE LITERATURE REVIEW PROCESS

being

A Thesis Presented to the Graduate Faculty
of Fort Hays State University in
Partial Fulfillment of the Requirement for
the Degree of Education Specialist

by

Karen Cole
M.L.S., Emporia State University

Date _____ Approved _____
Major Professor

Approved _____
Chairman, Graduate Council

HE 025 811

BEST COPY AVAILABLE

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
X This document has been reproduced as received from the person or organization originating it
☐ Minor changes have been made to improve reproduction quality
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Karen Cole
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Graduate Committee Approval

The Thesis Committee of Karen Cole hereby approves her thesis as meeting partial fulfillment of the requirements for the Degree of Education Specialist.

Approved_____
Chair, Graduate Committee

Approved_____
Committee Member

Approved_____
Committee Member

Approved_____
Committee Member

Date_____

Acknowledgments

The author expresses sincere appreciation and thanks to Dr. Bill Daley for his patience, advice, and guidance. A special thanks is extended to the members of her thesis committee: Dr. Bob Chalender, Dr. Ed Stehno, and Dr. Michael Slattery for their comments, suggestions and recommendations.

The author thanks Ms. Polly Hardin, University of Kansas, and Paul Burden, Kansas State University, for compiling the list of 1990 graduate students. A very special thank you is extended to all those who participated in the study. Their willingness to assist and especially their words of encouragement were heartwarming.

The author thanks Marnie Arnhold for her support and humor while typing this work.

Sincere appreciation goes to the family who suffered missed meals and unexplained mood swings, but continued their support, encouragement, and love.

Dr. Robert Meier deserves heartfelt thanks for his work with the statistical analysis. He willingly gave of his time and extended immeasurable support.

Table of Contents


| | Page |
|---|---|
| Introduction | 1 |
| Background | 1 |
| Educational Literature Review in Textbooks | 4 |
| Bibliographic Instruction | 8 |
| Electronic Indices | 11 |
| Indices/Databases for Educational Research | 18 |
| Summary of the Literature Review | 20 |
| Statement of the Problem | 21 |
| Importance of the Study | 21 |
| Composite Null Hypotheses | 23 |
| Definition of Variables | 25 |
| Independent Variables | 25 |
| Dependent Variables | 26 |
| Limitations | 27 |
| Delimitations | 27 |
| Methodology | 28 |
| Setting | 28 |
| Subjects | 28 |
| Instrument | 29 |
| Design | 30 |
| Data Collecting Procedure | 33 |
| Research Procedures | 34 |

Table of Contents (continued)


| | Page |
|---|---|
| Data Analyses . . . . . | 35 |
| Results. . . . . | 36 |
| Discussion . . . . . | 78 |
| References . . . . . | 83 |

List of Tables


Page

Table 1: A Comparison of Gender and Use of Electronic Indices for Review of the Literature . . . . . 39

Table 2: A Comparison of Gender and Use of Print Indices of Review of the Literature . . . . . 39

Table 3: A Comparison of Gender and Did the Subject Have Someone Complete a Search Other Than Self . . . . . 40

Table 4: A Comparison of Gender and Did the Subject Have Any Formal Training . . . . . 40

Table 5: A Comparison of Gender and the Type of Formal Training . . . . . 41

Table 6: A Comparison of Program of Study and Use of Electronic Indices for Review of the Literature . . . . . 43

Table 7: A Comparison of Gender and Use of Print Indices for Review of the Literature . . . . 44

Table 8: A Comparison of Program of Study and Did the Subject Have Someone Complete a Search Other Than Self. . . . . 45

Table 9: A Comparison of Program of Study and Did the Subject Have Any Formal Training . . . . . 46

Table 10: A Comparison of Program of Study and the Type of Formal Training . . . . . 47

Table 11: A Comparison of University Attended and Use of Electronic Indices for Review of the Literature . . . . . 48

Table 12: A Comparison of University Attended and Use of Print Indices for Review of the Literature . . . . . 49

Page

Table 13: A Comparison of University Attended and Did the Subject Have Someone Complete a Search Other Than Self . . . . . 49

Table 14: A Comparison of University Attended and Did the Subject Have Any Formal Training . . . . . 50

Table 15: A Comparison of University Attended and the Type of Formal Training . . . . . 50

Table 16: A Comparison of Completing a Masters Thesis and Use of Electronic Indices for Review of the Literature . . . . . 52

Table 17: A Comparison of Completing a Masters Thesis and Use of Print Indices for Review of the Literature . . . . . 52

Table 18: A Comparison of Completing a Masters Thesis and Did the Subject Have Someone Complete a Search Other Than Self . . . . . 53

Table 19: A Comparison of Completing a Masters Thesis and Did the Subject Have Any Formal Training . . . . . 53

Table 20: A Comparison of Completing a Masters Thesis and the Type of Format Training . . . 54

Table 21: A Comparison of Years Between the Masters Degree and Beginning the Doctoral Program and Use of Electronic Indices for Review of the Literature . . . . 56

Table 22: A Comparison of Years Between the Masters Degree and Beginning the Doctoral Program and Use of Print Indices for for Review of the Literature . . . . . 56

Table 23: A Comparison of Years Between the Masters Degree and Beginning the Doctoral Program and Did the Subject Have Someone Complete a Search Other Than Self . . . . . 57

Page

Table 24: A Comparison of Years Between the Masters Degree and Beginning the Doctoral Program and Did the Subject Have Any Formal Training . . . . . 57

Table 25: A Comparison of Years Between the Masters Degree and Beginning the Doctoral Program and the Type of Formal Training . . . . . 58

Table 26: A Comparison of Residency or Non-Residency and Use of Electronic Indices for Review of the Literature . . . . 60

Table 27: A Comparison of Residency or Non-Residency and Use of Print Indices for Review of the Literature . . . . . 60

Table 28: A Comparison of Residency or Non-Residency and Did the Subject Have Someone Complete a Search Other Than Self . . . . . 61

Table 29: A Comparison of Residency and Non-Residency and Did the Subject Have Any Formal Training . 61

Table 30: A Comparison of Residency and Non-Residency and the Type of Formal Training . . . . . 62

Table 31: A Comparison of Mean Ratings of Index Scores According to Gender, Program of Study and Years Between Masters and Doctorate Employing a Three-Way Analysis of Variance . . . . . 64

Table 32: A Comparison of Mean Ratings of Index Scores According to Gender, Program of Study and Residency Employing a Three-Way Analysis of Variance . . . . . 67

Table 33: A Comparison of Mean Ratings of Index Scores According to Gender, Years Between Masters and Doctorate and Residency Employing a Three-Way Analysis of Variance . . 70

Table 34: A Comparison of Mean Ratings of Index Scores According to Program of Study, Years Between Masters and Doctorate and Residency Employing a Three-Way Analysis of Variance . . 73

Page

Table 35: A Comparison of Mean Ratings of Index Scores According to University Attended, Completion of a Masters Thesis and Residency Employing a Three-Way Analysis of Variance . . . . . 76

List of Appendixes


| Appendix | | Page |
|---|---|---|
| A. | Telephone Survey | 89 |
| B. | Standardized Form for Survey | 91 |
| C. | Letter to Graduate Office at KU. | 96 |
| D. | Letter to Subjects | 99 |
| E. | Postcard Enclosed in Letters | 101 |
| F. | Second Letter to Subjects | 103 |
| G. | Indices Reported with Frequencies | 107 |

Abstract

The researcher investigated the literature review process of educational doctoral students at the University of Kansas and Kansas State University. The independent variables investigated were gender, program of study, university attended, Masters thesis written, years between completion of a masters program and commencement of the doctoral program, and campus residency while engaged in the review of the literature process. The dependent variables were computer indices used, print indices used, scores from scales of usefulness of print indices, scores of scales for usefulness of computer indices, methods for learning how to use indices, and formal training in how to do a review of the literature. The sample consisted of 61 subjects with 35 from Kansas State University and 26 from the University of Kansas. Eleven composite null hypotheses were tested. The researcher made a total of 70 comparisons plus 30 recurring comparisons. Of the 70 comparisons 40 were main effects and 30 were interactions.

Of the 40 main effects, two were statistically significant at the .05 level. The significant main effects were: 1) years between masters and doctoral program and using electronic indices; and 2) gender and having someone other than the subject complete a computer search.

Of the 30 interactions none was statistically significant at the .05 level.

The results of the study appeared to support the following generalizations:

1. there is an association between gender and having someone else complete a search;
2. there is an association between years between completion of a Masters degree and commencement of a doctoral program and using electronic indices;
3. there is no association between program of study and the literature review process;
4. there is no association between university attended and the literature review process;
5. there is no association between writing a Masters thesis and the literature review process; and
6. there is no association between campus residency and the literature review process.

# Introduction

## Background

This research project originated as a result of the wide spread introduction of alternative formats that can be used to access information in an academic environment. Students in a program of study not only have a variety of information sources, but also have multiple formats available for accessing information. These formats range from traditional print indices to online electronic card catalogs of local holdings as well as card catalogs at distant libraries, Compact Disc Read-Only Memory (CD-ROM) indices, and online databases that provide citations only, citation and abstract or full-text. With this variety of bibliographic tools available, the "end-user" or student is confronted with an endless number of research starting points.

In most academic libraries the end-user seeking information must rely on prior experience, previous instruction, or one-on-one assistance when in the library (Bradigan, Kroll & Sims, 1987). An early introduction to the library in an academic environment, if provided, generally focuses on what resources are available and a quick overview of how to use the them.

With the proliferation of "user-friendly" online database search systems and CD-ROM products, "today's reference librarian--whether in a school, public, academic, or special library--is facing an overwhelming choice of potential tools to assist in the reference process" (Harter & Jackson, 1988, p. 516). If library professionals are overwhelmed by the availability of potential tools which can be used, then library users, too, must be overwhelmed.

The researcher found no studies specific to the use of reference tools in the review of the literature process for graduate students. Studies by Osburn (1979) and Zaporozhetz (1987) discussed respectively the research process and the faculty advising role in the literature review process. Although neither study specifically addressed the use of reference tools, i.e. indices, databases, online catalogs, etc. in the literature review process, they did discuss the research process for the graduate student.

Osburn (1979) focused on research in three clusters: sciences, humanities, and social sciences. Even though educational research at the doctoral level can cross all of these clusters, typically the focus is on social science methodologies. According to Osburn (1979), there has been an increased emphasis on methodology and research design

with a de-emphasis on the product. A major component of the research process is the review of current and historical writings related to or supporting the research in progress. Assuming Osburn was correct and there is an emphasis on the methodology and design of research, then the review of literature process becomes critical for two reasons. First, the review of the literature was used to determine appropriate and acceptable methodologies. Second, supporting or related results could be identified through the literature review process.

Zaporozhetz (1987, p.1) in a study of "faculty advising for the literature review" found minimal research dealing with the review process in preparing the doctoral dissertation. She found little information specifically related to faculty advising and the review of the literature. In a summary Zaporozhetz (1987, p. 34) stated "literature review is a portion of the dissertation for which little quality material has been written to guide the doctoral candidate in education".

The following indices were used to identify published literature: ERIC online, ERIC CD-ROM, Education Index, Dissertation Abstracts Online, Library Literature, Library and Information Science Abstracts (LISA). After preliminarily reviewing the identified literature, questions were formulated to guide the research:

1. What do educational research textbooks present with regard to the literature review component of the dissertation?
2. What bibliographic instruction programs have been developed in libraries to assist the doctoral student in the literature review process and especially the impact of electronic databases on the bibliographic instruction?
3. What has been the impact of electronic databases on the selection and use of resources?
4. What texts provide information pertaining to indices/databases that could be used in educational research?

The review of related literature was organized as follows: (1) educational literature review as discussed in educational research texts; (2) bibliographic instruction; (3) indices/databases for educational research.

Educational Literature Review in Texts

In the 1989-90 Subject Guide to Books in Print (1989) there were 132 titles identified under the subject "Educational Research." An examination was completed to determine the extent to which doctoral students might have information related to the review of literature process. Titles in the 1989-90 Subject Guide to Books in Print

which represented anthologies and/or collected works were not considered for review. The reviewed texts were currently being used by faculty in the College of Education at Fort Hays State University, Kansas State University and University of Kansas. The researcher examined six textbooks for coverage of the topic, review of the literature. The table of contents and index of the six textbooks were used to identify the section of the textbook devoted to review of the literature. Copyright dates of the examined titles ranged from 1983-1990.

Three of the six textbooks examined contained chapters on reviewing the literature. These chapters ranged in length from 28 to 51 pages. The other three textbooks contained one to three pages in a chapter on "Putting It All Together--Designing, Doing, and Evaluating Research" (Mason & Bramble, 1989), "Selecting a Problem and Preparing a Research Proposal" (Best & Kahn, 1989), and "Locating Information" (Hopkins & Antes, 1990).

According to Mason and Bramble (1989, p. 342) "the review of the literature should serve to clarify the problem and give justification for the study that will be done." No discussion was provided on how to proceed with a review of the literature or the process for identifying resources that could be consulted by the student. Mason and Bramble (1989, p. 343) summarized the brief narrative on

the review of the literature by saying, "comprehensiveness is more important than amount."

Likewise in Best and Kahn (1990) no discussion was provided on the literature review process. In an appendix they listed selected indexes, abstracts, and reference materials that a doctoral student could use. Short annotations were provided for the indexes, abstracts and reference materials. Periodicals in education listed by title followed the annotated list.

Hopkins and Antes (1990, p. 67) stated that "more knowledge acquired about the related topics means a better developed study . . . collected readings provide background for the research hypothesis." Again no assistance was provided the doctoral student in determining resources that could be used in systematically proceeding with the review of the literature.

Borg and Gall (1983) devoted a chapter of 49 pages to "Review the Literature." In the 1989 edition they devoted a chapter of 51 pages to review of the literature. In more detail than the preceding textbooks, Borg and Gall discussed how to proceed with a review of the literature. A section in the chapter dealt with conducting a review of the literature. Borg and Gall (1989) presented a three step process on pages 120-161 for conducting a review of the literature: 1) key terms; 2) checking preliminary

sources; and 3) reading and noting selected references. In step two Borg and Gall (1989, p. 121) identified preliminary sources as "references, such as indexes and abstracts, that are intended to help one identify and locate research articles and other primary sources of information . . . ." An extensively annotated list of selected resources followed. Borg and Gall included a section on the use of electronic resources through electronic retrieval systems such as DIALOG and SDC/ORBIT. These authors devoted considerable more narrative to the literature review process than the other authors; yet, the student was not provided with a concise guide or handbook of available print and/or electronic indices that could be used. Information related to the use of the resources was not included in either edition of Borg and Gall.

Five functions of the literature review process were cited by Eichelberger (1989).

1. Learn the history of the problem.
2. Become familiar with the theoretical background of the problem.
3. Assess the strengths and weaknesses of previous studies.
4. Identify promising ways to study the problem.
5. Develop a conceptual framework and rationale for the present study (p. 70).

He presented several examples of literature reviews which could be used as models when summarizing the results of research. Yet, Eichelberger provided two and one-half pages related to resources that could be used in locating the literature for review. The description provided in the resource section concerning indices and resources that could be used represented fewer pages than the Borg and Gall text.

Bibliographic Instruction

Miller (1989) suggested that undergraduate and graduate students were often assumed to have a more well rounded general education than they do. This assumption could cause faculty and librarians to overestimate the expertise of graduate students. Beaubien, Hogan, and George (1982, p. 56) reflected "one is much more likely to overestimate the research sophistication of users than to underestimate it."

Kazlauskas (1987) studied bibliographic instruction programs in academic libraries. She found that Library Orientation and Instruction Exchange (LOEX), the national clearinghouse for bibliographic instruction information and materials, had no information on course-integrated bibliographic instruction for graduate students. Although course-integrated bibliographic programs have been developed for undergraduate students, few universities are

actively developing this type of bibliographic program for graduate students because their needs are more individualized (Kazlauskas, 1987). Madland (1985, p. 163) reflected that "undergraduates do not leave school with uniform library skills . . .from this pool of undergraduates, come our graduate students."

Dreifuss (1981) surveyed graduate faculty to determine to what extent faculty should assist students in learning how to use the library. An earlier study by Lubans (1980) surveyed undergraduate faculty for the same information as Dreifuss. The conclusion of both studies was that students should learn to use the library on their own. Even though faculty expected students to be effective consumers of libraries and information, the faculty are not responsible for assisting in the process. Fernberg (1983) indicated that business graduate students do not know how to use the library or library resources in the area of business. As a result of this study Louisiana State University developed a videotape which introduced students to the library and specifically to resources in the area of business.

Studies or programs that have addressed graduate student bibliographic instruction (Kazlauskas, 1987; Carlson & Miller, 1984; Thomas, 1984; Schobert, 1982; Fernberg, 1983; Dreifuss, 1981; Ishaq & Cornick, 1978) have focused on at least one of four methods of instruction: 1)

course-integrated instruction; 2) bibliographic instruction seminars or workshops; 3) bibliographic instruction specific to a course; and 4) one-on-one individualized instruction. The Library and Research Consultations (LaRC) (Ishaq & Cornick, 1978) and Term Paper Consultants (TPC) (Schobert, 1982) programs were examples of one-on-one individualized consultation and seminar/workshop programs. Carlson & Miller (1984) focused on a model of course-integrated instruction and the factors regarding a successful program. Kazlauskas (1987) pointed out that no one method stands alone. The course integrated method which is most prevalent may not be the best instructional method for graduate students. She concluded that graduate students have needs that should be individually addressed.

Thomas (1984) surveyed faculty at California State University, Long Beach, for the purpose of determining faculty attitudes toward bibliographic instruction and use of the library. The study indicated that faculty use of the library related positively to the decision to offer bibliographic instruction. Generally bibliographic instruction was of the course-integrated type. Both Thomas (1984) and Zaporozhetz (1987) investigated the role of faculty in instruction and use of the library. Faculty attitudes and library use behavior were found to be

critical in the development of library and research skills of graduate students with whom they worked.

The introduction of electronic data has further complicated traditional bibliographic instruction programs in university libraries. Shill (1987, p. 435) noted that:

> . . .the instructional mission of the academic library must be reassessed as we advance into the electronic environment. Librarians must decide whether they will provide bibliographic instruction as traditionally defined or a broader set of skills and knowledge relevant for lifelong self-education in an increasingly electronic environment.

This advance into electronic resources by the student or end-user has added to the complexity of the literature review process.

Electronic Indices

Online database searching as an electronic resource has been available as a fee based service in many academic libraries for approximately 20 years (Bradigan et al., 1987; Sieburth, 1988). The professional librarian performed online database searching and acted as an intermediary between the student and the electronic database. After interviewing the student the search was performed (Sieburth, 1988). Online searching has not typically been available for independent student use

because of the utilization of Boolean logic and cost of computer time.

Maciuszko (1987) investigated online databases and equivalent print indexes for their overall performance in terms of relevance, utility and user effort. Relevance was measured using recall and precision ratios. Utility of the search results was measured by utility ratings and a questionnaire. Searcher and user effort was measured by ratings. Reference librarians in an academic library and reference librarians in a public library researched a predetermined set of student written questions in both the print and online versions of the indices. The results of the study supported the coexistence of print and electronic indices. Maciuszko's study centered on the librarian as user of the indices rather than the student as end-user.

Studies related to end-user characteristics and behaviors, both cognitive and affective, have appeared in the literature (Siitonen, 1984; Teitelbaum-Kronish, 1984; Walker, 1988). These studies focused on the cognitive aptitudes of communication, verbal ability, logical thinking, decision making, evaluation, search process, and end-user characteristics such as academic status, previous online search experience, previous computer experience, type of information needed. Affective characteristics that have been investigated are innovation, organization,

responsibility, risk taking, and self esteem. None of the studies conclusively identified any characteristics or behaviors that significantly affected online database searching results.

Penhale and Taylor (1986) concluded that students at Earlham College in Richmond, Indiana were able to perform acceptable online searches with minimal bibliographic instruction. Using BRS/After Dark, the students located relevant citations in order to complete research assignments. The student searchers did not retrieve as many relevant citations online as quickly as experienced reference librarians, but the students were satisfied with their results. "Teaching college students to plan and execute their own online searches can be an effective and exciting component of bibliographic instruction" (Penhale & Taylor, 1986, p. 220).

Littlejohn (1987) reported the results of online searching from the students' view. Lippincott Library of the Wharton School, University of Pennsylvania implemented student online searching by subscribing to BRS/After Dark, Dow Jones News Retrieval, and Wiley Executive Information Service. "The library provided a two-page guide to searching that included Boolean logic and commands" (Littlejohn, 1987, p. 461). Conclusions drawn from the study were a result of student perceptions on a self-

reported survey. Although a chi square test to a cross-tabulation of responses resulted in no significant relations, several inferences were made. Students who retrieved a large number of references reported satisfaction on the survey that those references were more relevant. Students who had learned to search either through library orientation or individual instruction were more comfortable asking for assistance from a librarian.

The CD-ROM explosion was introduced in 1985 at the American Library Association Conference in Washington, D.C. when Information Access premiered InfoTrac (Kleiner, 1987). This machine readable resource has taken online database machine readable data and placed them on compact laser discs. Five years after the introduction of InfoTrac "the 1990 edition of CD-ROMs in Print lists over 6000 commercially available titles" (Nelson, 1990, p. 45). CD-ROM as a technology has introduced a third format available to the student who is doing research.

Studies reviewed by the researcher related to CD-ROM utilized survey and interview research (LePoer & Mularski, 1989; Stewart & Olsen, 1988; Whitaker, 1990; Allen, 1989; Nissley, Anderson, & Gaal, 1989; Steffey & Meyer, 1989). Authors of the preceding studies concluded that students liked CD-ROM as an alternative to print indices. Students reported that they had found relevant information when

doing their search. Nissley, Anderson, and Gaal (1989, p. 97) reported that 16 or 40% of the 40 students interviewed had received no prior training in the use of CD-ROM. LePoer & Mularski (1989, p. 43) found that 39 or 60% of 65 surveys analyzed indicated that no instruction with library personnel had occurred. Stewart & Olsen (1988, p. 52) concluded that users "do search more effectively when given some formal instruction in logical operators and vocabulary control." The other studies (Whitaker, 1990; Allen, 1989; Steffey & Meyer, 1989) reviewed indicated continued need for user training.

Belanger and Hoffman (1990) studied the factors of age, gender, level of familiarity with computers and level of study in relationship to frequency of use of ERIC on CD-ROM. The authors conducted research with education students both undergraduate and graduate at Concordia University in Montreal, Canada. Belanger and Hoffman mailed 361 questionnaires and had 231 questionnaires returned for a 63.6% return rate. The results of the study revealed that a cross-tabulation of frequency of use with familiarity with computers, age, and gender were all significant at the .05 level. The study employed four age levels: to 24, 25-34, 35-44, and 45+. Frequency of use employed four levels: never, once, 2-5 times, and 6 or more times. The study revealed a Chi square significant at

the .05 level between frequency of use and gender (Belanger & Hoffman, p. 156). The researchers also found that patterns for frequency of use differ for men and women particularly in the 25-34 and 35-44 age groups (Belanger & Hoffman, 1990, p. 158). In the cross-tabulation of frequency of use with familiarity with computers there was a weak association according to the Somers' D value of .17321 (Belanger & Hoffman, 1990, p. 158). Level of study when cross-tabulated with frequency of use was not found significant at the .05 level. This preliminary research identified four possible factors: (1) age, (2) gender, (3) familiarity with computers, and (4) level of study affecting frequency of use of ERIC on CD-ROM. Belanger & Hoffman recommended that further research was needed to validate the data for students in other universities.

Allen (1990) examined the appropriateness of CD-ROM databases selected by patrons for their research. Sixteen CD-ROM databases were available for students to use at the Undergraduate Library of the University of Illinois at Urbana-Champaign. A panel of three independent judges familiar with all sixteen of the CD-ROM databases were asked to select three appropriate databases for each of the topics included in the study. Eighty-two student searches were observed and used in the study. The database selected

and the topic of each of the 82 student searches were reviewed by the independent judges. Results of the study revealed that 18 or 21.95% (Allen, 1990, p. 72) of the 82 students selected a CD-ROM database that the independent judges identified was appropriate, all of the judges totally agreed with the choices of databases. While 16 or 19.51% (Allen, 1990, p. 72) of the 82 students selected CD-ROM databases that were inappropriate, all of the judges were in total agreement that the student selected a database that was totally inappropriate. The other 48 or 58.54% of the 82 students selected databases that the judges did not have total agreement in the appropriateness of the selected databases. Even though there were similar percentages of appropriate and inappropriate database selections, the search process was almost identical for both groups. Highly specialized databases received more consistent responses than the more generalized databases.

Allen recommended that further research should be conducted related to assessing the value of training students in the use of CD-ROM databases. Further research was also recommended in search behavior of patrons. In the Allen study there were approximately one-fourth of the students selecting inappropriate databases, yet those students did not choose to use a different database. The study also affirmed Kleiner (1987) in that students were

generally satisfied with their results and they liked to use the CD-ROM databases.

Indices/Databases for Educational Research

Borg and Gall (1989) identified the following print indices and databases for the researcher in education:

Education Index
Psychological Abstracts
ERIC (Educational Resources Information Center)
    Current Index to Journals (CIJE)
    Research in Education (RIE)
Science Citation Index (SCI)
Social Science Citation Index (SSCI)
Bibliographic Index
Sociological Abstracts
Exceptional Child Education Resources (ECER)
State Education Journal Index
Child Development Abstract and Bibliography
Business Education Index
Educational Administration Abstracts
Physical Education Index
Dissertation Abstracts International
Comprehensive Dissertation Index
Master's Theses in Education
Masters Abstracts International
Reader's Guide to Periodical Literature
Social Sciences Index
The New York Times Index
Facts on File
National Information Center for Educational Media
    (NICEM)

Borg and Gall (1989) included a section related to computer resources that could be used. In the narrative related to computer searches, they indicated that one should visit with the reference librarian concerning an online search. A brief comment was made concerning compact discs. "The ERIC data base is also available on compact disc. We anticipate that many university libraries will

purchase these discs, . . ." (p. 140). Borg and Gall (1989) cited the following electronic indices that could be used.

National Technical Information Service (NTIS)
ERIC
PsychINFO
Exceptional Child Education Resources (ECER)
PsychALERT
Dissertation Abstract On-Line
Federal Research in Progress
A-V ONLINE
Child Abuse and Neglect
Magazine Index
Medline
Mental Health Abstracts
National Newspaper Index
NEWSEARCH
SOCIAL SCISEARCH
Sociological Abstracts

Best and Kahn (1989) identified print indices and databases available for the education researcher.

Cumulative Book Index
Books in Print
Sources of Information in the Social Sciences
Canadian Education Index
Current Contents: Education
Current Index to Journals in Education (CIJE)
Index of Doctoral Dissertations International
Comprehensive Dissertation Index
Bibliographic Index
Readers' Guide to Periodic Literature
Abridged Readers' Guide to Periodic Literature
New York Times Index
Subject Index to the Christian Science Monitor
Social Sciences Index
Humanities Index
Applied Science and Technology Index
Business Periodicals Index
Air University Library Index
Music Index: The Key to Current Music Periodical Literature
Physical Education Index
Physical Education/Sports Index
Art Index
Biological and Agricultural Index
Occupational Index

Cumulative Career Index
Index to Legal Periodicals
Index Medicus
Hospital Literature Index
Cumulative Index to Nursing Literature
International Nursing Index
Rehabilitation Literature
Index to Religious Periodical Literature
Catholic Periodical and Literature Index
Index to Jewish Periodicals
Index to Periodicals: Articles by and about Negroes
Public Affairs Information Service Bulletin
Book Review Index
Mental Health Book Review Index
Selected United States Government Publications
Index to U.S. Government Periodicals
International Guide to Educational Documentation
Child Development Abstracts and Bibliography
Review of Child Development Research
Research Relating to Children
Research Related to Emotionally Disturbed Children
Exceptional Child Education Resources
Mental Retardation Abstracts
Deafness, Speech and Hearing Abstracts
Selected RAND Abstracts
College Student Personnel Abstracts
Psychological Abstracts
Annual Review of Psychology
Sociological Abstracts
Social Work Research and Abstracts
Crime and Delinquency Abstracts
Research Annual on Intergroup Relations
Religious and Theological Abstracts
Women Studies Abstracts
Book Review Digest

Best and Kahn (1989) provided no information related to online database searching or CD-ROM databases.

Summary of the Literature Review

In conclusion, the related literature revealed the complexity of the literature review process with regard to locating information. No studies were found which identified effective bibliographic instruction programs for

doctoral students. No textbooks or guides were found which provided a model for how to proceed in locating research information or which identified indices/databases that could be used by doctoral students in education. Seven studies were found pertaining to factors or variables associated with undergraduate students and the use of indexes in the library.

## Statement of the Problem

The purpose of the researcher was to investigate the literature review process of educational doctoral students at the University of Kansas and Kansas State University. The independent variables investigated were gender, program of study, university attended, Masters thesis written, years between completion of masters program and commencement of the doctoral program, and campus residency while engaged in the review of the literature process. The dependent variables were computer indices used, print indices used, scores from scales of usefulness of print indices used, scores from scales of usefulness of computer indices used, methods for learning how to use indices, and formal training in how to do a review of the literature.

## Importance of the Study

The review of the related literature indicated that studies had not been conducted pertaining to how doctoral students proceed with the review of literature process. No

studies were found that discussed what indices/databases could be used by doctoral students in education or bibliographic instruction programs for doctoral students which teach how to use indices/databases. One study was found and it was for undergraduates which discussed characteristics or factors in students which might affect the research process.

This exploratory study generated information related to what indices/databases were used by doctoral students, how graduate students learned to use indices, and what indices were most useful in the review of the literature process according to the students.

The results of the present study could be used by librarians and faculty who work with doctoral students. The information from the present study could be used in three possible ways: 1) to develop bibliographic instruction programs in libraries for doctoral students; 2) to develop a handbook for use by doctoral students that identifies what indices/databases are available and how to use those indices/databases; and 3) to develop formal course work in the doctoral program sequence of courses related to how to proceed with the review of the literature process.

The results from the present study provided information pertaining to the following questions:

1. Is there an association between gender and the review of the literature process?
2. Is there an association between program of study and the review of the literature process?
3. Is there an association between university attended and the review of the literature process?
4. Is there an association between writing a Masters thesis and the review of the literature process?
5. Is there an association between years between completion of a masters program and commencement of the doctoral program and the review of the literature process?
6. Is there an association between campus residency and the review of the literature process?

Composite Null Hypotheses

All hypotheses were tested at the .05 level of significance.

1. The difference between obtained and expected frequency distributions according to gender and the review of the literature process will not be statistically significant.

2. The difference between obtained and expected frequency distributions according to program of study and the review of the literature process will not be statistically significant.

3. The difference between obtained and expected frequency distributions according to university attended and the review of the literature process will not be statistically significant.

4. The difference between obtained and expected frequency distributions according to writing a Masters thesis and the review of the literature process will not be statistically significant.

5. The difference between obtained and expected frequency distributions according to years between completion of a masters program and commencement of the doctoral program and the review of the literature process will not be statistically significant.

6. The difference between obtained and expected frequency distributions according to campus residency and the review of the literature process will not be statistically significant.

7. The differences among mean ratings of index scores according to gender, program of study and years between masters and doctorate will not be statistically significant.

8. The differences among mean ratings of index scores according to gender, program of study and residency will not be statistically significant.

9. The differences among mean ratings of index scores according to gender, years between masters and doctorate and residency will not be statistically significant.

10. The differences among mean ratings of index scores according to program of study, years between masters and doctorate and residency will not be statistically significant.

11. The differences among mean ratings of index scores according to university attended, completion of a masters thesis and residency will not be statistically significant.

## Definition of Variables

### Independent Variables

The independent variables were self reported or provided by the respective university education graduate office.

1. Gender--two levels
    a. Male
    b. Female
2. Program--five levels determined post hoc
    a. Educational Administration
    b. Curriculum and Instruction which included: Curriculum, Visual Arts Education, Physical Education, and Music Education
    c. Adult Education and Higher Education

d. Special Education

e. Student Counseling which included: Student Counseling, Educational Psychology, School Psychology, and Counseling and Psychology

3. University--two levels

a. Kansas State University

b. University of Kansas

4. Completion of masters thesis--two levels

a. Yes

b. No

5. Years between masters program and doctoral program--3 levels determined post hoc

a. 0-4 years

b. 5-9 years

c. 10+ years

6. Campus residency--two levels

a. Yes

b. No

Dependent Variables

The following were employed as dependent variables:

1. computer databases used;
2. print indices used;
3. scores from scales of usefulness rating of print indices;

4. scores from scales of usefulness rating of computer indices;
5. methods of learning how to use indices;
6. formal training in how to do a review of the literature.

## Limitations

The following might have affected the results of the present study:

1) a random sample was not used;
2) only 1990 graduates were sampled;
3) subjects were only from Kansas universities which grant doctoral degrees in education;
4) the sample size was small;
5) students with permanent addresses outside of the United States were not contacted;
6) subjects were contacted by phone and interviewed at different times.

## Delimitations

The following were delimitations of the present study:

1) no formal pilot study was made of the telephone survey instrument;
2) no reliability studies were completed for the survey instrument; and
3) no validity studies were completed for the survey instrument.

# Methodology

## Setting

Kansas State University is the second largest of the seven Regents Universities in Kansas. The University is located in Manhattan, Kansas in the northeast part of the state. Kansas State University is a land grant institution established under the Morrill Act. It was founded in 1863. The College of Education offers the Doctor of Philosophy (Ph.D.) in three program areas. The College offers the Doctor of Education (Ed.D.) in six program areas ("Kansas State University," 1989).

The University of Kansas is the largest of the seven Regents Universities in Kansas. The University is located in Lawrence, Kansas in the northeast part of the state. The University of Kansas was founded in 1866. In 1989 the Graduate School at the University of Kansas had approximately 5,375 students enrolled in graduate programs. The College of Education offers a Doctor of Education (Ed.D.) in five program areas and a Doctor of Philosophy with a major in education (Ph.D.) in five program areas ("University of Kansas," 1990).

## Subjects

The researcher requested a list of all students who had completed doctoral programs as determined by the parent institution from January 1990 through December 1990. The

subjects came from the lists provided by the College of Education Graduate Office at Kansas State University, Manhattan, Kansas and the College of Education Graduate Office at the University of Kansas, Lawrence, Kansas.

The lists consisted of a total of 101 students in the programs of visual arts education, curriculum, special education, student counseling, physical education, music education, school psychology, educational psychology, counseling and psychology, educational administration, higher education and adult education. There were a total of 30 males and 29 females who had completed doctoral programs at Kansas State University and 23 males and 19 females who had completed doctoral programs at the University of Kansas.

All 101 graduates were mailed surveys and asked to participate in the study. Sixty-one agreed to participate and were interviewed by the researcher. The sample consisted of 34 females and 27 males. Twenty-six of the 61 were University of Kansas graduates; 35 were Kansas State University graduates.

Instrument

A telephone survey instrument developed by the researcher was used to collect data (Appendix A). All indexes, both print and electronic, reported as having been used by the graduates were recorded (Appendix G). Those

indexes reported by three or more subjects were used for computing the mean usefulness ratings of index scores.

Design

A simple factor and factorial status survey designs were employed. The independent variables investigated were: gender, university, program, completion of a masters thesis, years between masters program and commencement of doctoral program and campus residency. The dependent variables were: computer databases used; print indices used; usefulness rating of print indices used; usefulness rating of computer indices used; methods of learning how to use indices; formal training. The following designs were employed with the composite null hypotheses:

1. Composite null hypothesis number 1--a Chi square for independence;
2. Composite null hypothesis number 2--a Chi square for independence;
3. Composite null hypothesis number 3--a Chi square for independence;
4. Composite null hypothesis number 4--a Chi square for independence;
5. Composite null hypothesis number 5--a Chi square for independence;
6. Composite null hypothesis number 6--a Chi square for independence;

7. Composite null hypothesis number 7--a 2 X 5 X 3 factorial design;
8. Composite null hypothesis number 8--a 2 X 5 X 2 factorial design;
9. Composite null hypothesis number 9--a 2 X 3 X 2 factorial design;
10. Composite null hypothesis number 10--a 5 X 3 X 2 factorial design;
11. Composite null hypothesis number 11--a 2 X 2 X 2 factorial design.

Campbell and Stanley (1963) and Borg and Gall (1989) addressed threats to internal validity. In the present study threats to internal validity were dealt with in the following manner:

1. history--did not pertain to the present study because the measurement was taken only one time;
2. selection--60.4 percent of the doctoral graduates for 1990 were contacted for the interview process;
3. statistical regression--did not pertain to the present study because there was no evidence of extreme subjects;
4. maturation--did not pertain to the present study because only one measure was taken;
5. testing--did not pertain to the present study because only one measure was taken;

6. differential selection---did not pertain to the present study because all possible subjects were included in the study from both institutions;
7. diffusion of treatment--did not pertain to the present study because there was no treatment implemented;
8. mortality--all subjects who could be contacted by telephone were included in the present study;
9. experimenter bias--no implementation was present in the study and data were collected by the researcher using a standardized form (Appendix B);
10. statistical conclusion--two mathematical assumptions were violated in the analysis of variance; cells did not have equal numbers of subjects (a general linear model was employed to correct for the lack of equal numbers of subjects in the cells) and random sampling was not used.

Campbell and Stanley (1963) and Borg and Gall (1989) also addressed threats to external validity. In the present study threats to external validity were dealt with in the following manner:

1. population external validity--random sampling of the entire population of 1990 doctoral students in education was not feasible, subjects came from the doctoral degree granting universities in

Kansas, generalizations from the present study might be appropriate for the two universities for future graduate students, generalizations from the present study might also be appropriate for similar institutions;

2. ecological external validity--no treatment was implemented with the present study and data were collected under acceptable conditions.

Data Collecting Procedure

The Graduate Office of Kansas State University, Manhattan, Kansas and the Graduate Office of the University of Kansas, Lawrence, Kansas were contacted for a list of graduate students who had completed the doctoral program in education between January 1, 1990 and December 31, 1990. The offices were asked to supply the names, addresses, phone number, program of study for each doctoral student (Appendix C).

A letter was sent to each name on the lists. The letter discussed the purpose of the study and asked for the participation of the student in the study. Enclosed with the letter was a copy of the telephone survey questions. The letter also indicated a week in which the researcher would call in order to conduct the telephone survey (Appendix D). Also enclosed was a postage paid postcard which identified a specific day and time that would be most

convenient for the student to participate in an interview and the phone number for the researcher to call (Appendix E). Letters which were returned to the researcher by the post office identified subjects no longer at the address available to the researcher. A call to each University for current addresses yielded some changes in address. Those with address changes were sent a second letter. A second letter and a new postcard were also sent to first time non-respondents (Appendix F).

If subjects could not be reached by telephone the first time, subsequent phone calls were made during the time period specified in the letter to the subject. All 61 subjects who returned postcards were contacted.

A standardized form used by the researcher for recording responses was developed for use during the interview. The forms were coded in order to maintain anonymity (Appendix A).

Inventories were coded and prepared for analysis. Data from the inventory survey were keyed into the Statistical Analysis System (SAS) program.

Research Procedures

The researcher proceeded in the following manner while completing the study:

1. research topic selected;

2. preliminary search of both print and electronic resources;
3. preliminary review of the literature;
4. research topic more clearly defined;
5. search of both print and electronic indices;
6. complete review of the literature;
7. telephone survey instrument designed;
8. research proposal drafted;
9. research proposal refined;
10. research proposal defended;
11. data collected;
12. data analyzed;
13. results of the data analysis drafted in written form;
14. data analysis finalized;
15. research defended; and
16. final editing of the research.

Data Analysis

The following were compiled:

1. appropriate descriptive statistics;
2. chi squares of independence;
3. three-way analysis of variance (general linear model);
4. Bonferroni (Dunn) *t*-test for means; and
5. Duncans multiple range test for means.

## Results

The purpose of the researcher was to investigate the literature review process of students in doctoral programs in education in Kansas universities. The independent variables investigated were gender, program of study, university attended, Masters thesis written, years between completion of a masters program and commencement of the doctoral program, and campus residency while engaged in the review of the literature process. The dependent variables were computer indices used, print indices used, scores from scales of usefulness of print indices used, scores from scales of usefulness of computer indices used, methods of learning how to use indices, and formal training in how to do a review of the literature. A sample size of 61 was utilized. Eleven composite nulls were tested. The following designs were employed with the composite null hypotheses:

1. Composite null hypothesis number 1--a Chi square for independence;
2. Composite null hypothesis number 2--a Chi square for independence;
3. Composite null hypothesis number 3--a Chi square for independence;
4. Composite null hypothesis number 4--a Chi square for independence;

5. Composite null hypothesis number 5--a Chi square for independence;
6. Composite null hypothesis number 6--a Chi square for independence;
7. Composite null hypothesis number 7--a 2 X 5 X 3 factorial design;
8. Composite null hypothesis number 8--a 2 X 5 X 2 factorial design;
9. Composite null hypothesis number 9--a 2 X 3 X 2 factorial design;
10. Composite null hypothesis number 10--a 5 X 3 X 2 factorial design;
11. Composite null hypothesis number 11--a 2 X 2 X 2 factorial design.

It was hypothesized in composite null hypothesis number 1 that the difference between obtained and expected frequency distributions according to gender and the review of the literature process would not be statistically significant. The literature review process was defined as: 1) use of electronic indices; 2) use of print indices; 3) having someone complete a search; 4) having formal training; and 5) the type of formal training. Information pertaining to composite null hypothesis number 1 was presented in Tables 1-5. The following was cited in Tables 1-5: gender, dependent variable, obtained frequencies,

expected frequencies, chi square values, p values, degrees of freedom, and contingency coefficient.

Table 1

A Comparison of Gender and Use of Electronic Indices for Review of the Literature

| Gender | No | Yes |
|---|---|---|
| Female | 4/6.56[a] | 30/49.18 |
| Male | 1/1.64 | 26/42.62 |

chi square = 1.300 (df=1; p=.254)
n = 61
contingency coefficient = .144

[a]Obtained frequency/expected frequency

Table 2

A Comparison of Gender and Use of Print Indices for Review of the Literature

| Gender | No | Yes |
|---|---|---|
| Female | 7/11.84[a] | 27/44.26 |
| Male | 5/8.20 | 22/36.07 |

chi square = 0.041 (df=1; p=.840)
n = 61
contingency coefficient = .026

[a]Obtained frequency/expected frequency

Table 3

A Comparison of Gender and Did the Subject Have Someone Complete a Search Other Than Self

| Gender | No | Yes |
|---|---|---|
| Female | 21/34.43[a] | 13/21.31 |
| Male | 9/14.75 | 18/29.51 |

chi square = 4.867 (df=1; p=.027)
n = 61
contingency coefficient = .272

[a]Obtained frequency/expected frequency

Table 4

A Comparison of Gender and Did the Subject Have Any Formal Training

| Gender | No | Yes |
|---|---|---|
| Female | 10/16.39[a] | 24/39.24 |
| Male | 12/19.67 | 15/24.59 |

chi square = 1.475 (df=1; p=.225)
n = 61
contingency coefficient = .154

[a]Obtained frequency/expected frequency

Table 5

A Comparison of Gender and the Type of Formal Training

| Gender | 0[b] | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| Female | 10/16.39[a] | 10/16.39 | 12/19.67 | 1/1.64 | 1/1.64 |
| Male | 12/19.67 | 10/16.39 | 5/8.20 | 0/0.00 | 0/0.00 |

chi square = 4.318 (df=4; p=.365)
n = 61
contingency coefficient = .257

[a]Obtained frequency/expected frequency
[b]type of training
0 = no training
1 = a class
2 = a class session
3 = a seminar
4 = other

One of the 6 p values was statistically significant at the .05 level; therefore, the null was rejected. The significant comparison was for gender and did someone other than the subject do a computer search. The results cited in Table 3 indicated an association between gender and having someone other than self complete a search.

It was hypothesized in composite null hypothesis number 2 that the difference between obtained and expected frequency distributions according to program of study and the review of the literature process would not be

statistically significant. The literature review process was defined as: 1) use of electronic indices; 2) use of print indices; 3) having someone complete a search; 4) having formal training; and 5) type of formal training. Information pertaining to composite null hypothesis number 2 was presented in Tables 6-10. The following was cited in Tables 6-10: program of study, dependent variable, obtained frequencies, expected frequencies, chi square values, p values, degrees of freedom, and contingency coefficient.

Table 6

A Comparison of Program of Study and Use of Electronic Indices for Review of the Literature

| Program of Study[b] | No | Yes |
|---|---|---|
| Curr. | 4/6.56[a] | 15/24.59 |
| Spec. Ed. | 0/0.00 | 10/16.39 |
| Counseling | 1/1/64 | 8/13.11 |
| Adult Ed | 0/0.00 | 14/22.95 |
| Educ. Adm. | 0/0.00 | 14/22.95 |

chi square = 7.221 (df=4; p=.125)
n = 61
contingency coefficient = .325

[a]obtained frequency/expected frequency
[b]Program of Study
Curr. = curriculum, visual education, music education, physical education
Spec. Ed. = special education
Counseling = educational psychology, school psychology, student counseling, counseling and psychology
Adult Ed. = adult education and higher education
Educ., Adm. = educational administration

Table 7

A Comparison of Gender and Use of Print Indices for Review of the Literature

| Program of Study[b] | No | Yes |
|---|---|---|
| Curr. | 2/3.28[a] | 17/27.87 |
| Spec. Ed. | 4/6.56 | 6/9.84 |
| Counseling | 3/4.92 | 6/9.84 |
| Adult Ed | 0/0.00 | 9/14.75 |
| Educ. Adm. | 3/4.92 | 11/18.03 |

chi square = 6.915 (df=4; p=.140)
n = 61
contingency coefficient = .319

[a] obtained frequency/expected frequency

[b] Program of Study
Curr. = curriculum, visual education, music education, physical education
Spec. Ed. = special education
Counseling = educational psychology, school psychology, student counseling, counseling and psychology
Adult Ed. = adult education and higher education
Educ. Adm. = educational administration

BEST COPY AVAILABLE

Table 8

A Comparison of Program of Study and Did the Subject Have Someone Complete a Search Other than Self

| Program of Study[b] | No | Yes |
|---|---|---|
| Curr. | 11/18.03[a] | 8/13.11 |
| Spec. Ed. | 7/11.48 | 3/4.92 |
| Counseling | 5/8.20 | 4/6.56 |
| Adult Ed | 4/6.56 | 5/8.20 |
| Educ. Adm. | 3/4.92 | 11/18.03 |

chi square = 6.853 (*df*=4; *p*=.144)
*n* = 61
contingency coefficient = .318

[a]obtained frequency/expected frequency
[b]Program of Study
Curr. = curriculum, visual education, music education, physical education
Spec. Ed. = special education
Counseling = educational psychology, school psychology, student counseling, counseling and psychology
Adult Ed. = adult education and higher education
Educ. Adm. = educational administration

Table 9

A Comparison of Program of Study and Did the Subject Have Any Formal Training

| Program of Study[b] | No | Yes |
|---|---|---|
| Curr. | 5/8.20[a] | 14/22.95 |
| Spec. Ed. | 3/4.92 | 7/11.48 |
| Counseling | 4/6.56 | 5/8.20 |
| Adult Ed | 4/6.56 | 5/8.20 |
| Educ. Adm. | 6/9.84 | 8/13.11 |

chi square = 1.771 (df=4; p=.778)
n = 61
contingency coefficient = .168

[a]obtained frequency/expected frequency

[b]Program of Study
Curr. = curriculum, visual education, music education, physical education
Spec. Ed. = special education
Counseling = educational psychology, school psychology, student counseling, counseling and psychology
Adult Ed. = adult education and higher education
Educ. Adm. = educational administration

Table 10

A Comparison of Program of Study and the Type of Formal Training

| Program of Study[b] | 0[c] | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| Curr. | 5/8.20[a] | 7/11.48 | 5/8.20 | 1/1.64 | 1/1.64 |
| Spec. Ed. | 3/4.92 | 4/6.56 | 3/4.92 | 0/0.00 | 0/0.00 |
| Counseling | 4/6.56 | 0/0.00 | 5/8.20 | 0/0.00 | 0/0.00 |
| Adult Ed. | 4/6.56 | 4/6.56 | 1/1.64 | 0/0.00 | 0/0.00 |
| Educ. Adm. | 6/9.84 | 5/8.20 | 3/4.92 | 0/0.00 | 0/0.00 |

chi square = 12.791 (df=16; p=.688)
n = 61
contingency coefficient = .416

[a]obtained frequency/expected frequency
[b]Program of Study
Curr. = curriculum, visual education, music education, physical education
Spec. Ed. = special education
Counseling = educational psychology, school psychology, student counseling, counseling and psychology
Adult Ed. = adult education and higher education
Educ. Adm. = educational administration
[c]type of training
0 = no training
1 = a class
2 = a class session
3 = a seminar
4 = other

None of the 6 p values was statistically significant at the .05 level; therefore, the null hypotheses for these comparisons were retained. The results cited in Tables 6-10 indicated no association between any independent and dependent variables.

It was hypothesized in composite null hypothesis number 3 that the difference between obtained and expected frequency distributions according to university attended and the review of the literature process would not be statistically significant. The literature review process was defined as: 1) use of electronic indices; 2) use of print indices; 3) having someone complete a search; 4) having formal training; and 5) type of formal training. Information pertaining to composite null hypothesis number 3 was presented in Tables 11-15. The following was cited in Tables 11-15: university, dependent variable, obtained frequencies, expected frequencies, chi square values, *p* values, degrees of freedom, and contingency coefficient.

Table 11

A Comparison of University Attended and Use of Electronic Indices for Review of the Literature

| University | No | Yes |
|---|---|---|
| KSU | 1/1.64[a] | 34/55.74 |
| KU | 4/6.56 | 22/36.07 |

chi square = 3.111 (*df*=1; *p*=.078)
*n* = 61
contingency coefficient = .220

[a]obtained frequency/expected frequency

Table 12

A Comparison of University Attended and Use of Print Indices for Review of the Literature

| University | No | Yes |
|---|---|---|
| KSU | 8/13.11[a] | 27/44.26 |
| KU | 4/6.50 | 22/36.07 |

chi square = 0.527 (df=1; p=.468)
n = 61
contingency coefficient = .093

[a]obtained frequency/expected frequency

Table 13

A Comparison of University Attended and Did the Subject Have Someone Complete a Search Other Than Self

| University | No | Yes |
|---|---|---|
| KSU | 16/26.23[a] | 19/31.15 |
| KU | 14/22.95 | 12/19.67 |

chi square = 1.771 (df=4; p=.778)
n = 61
contingency coefficient = .080

[a]obtained frequency/expected frequency

Table 14

A Comparison of University Attended and Did the Subject Have Any Formal Training

| University | No | Yes |
|---|---|---|
| KSU | 11/18.03[a] | 24/39.34 |
| KU | 11/18.03 | 15/24.59 |

chi square = 0.766 (df=4; p=.382)
n = 61
contingency coefficient = 0.111

[a]obtained frequency/expected frequency

Table 15

A Comparison of University Attended and the Type of Formal Training

| University | 0[b] | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| KSU | 11/18.03[a] | 11/18.03 | 13/21.31 | 0/0.00 | 0/0/00 |
| KU | 11/18.03 | 9/14.75 | 4/6.56 | 1/1.64 | 1/1.64 |

chi square = 5.762 (df=4; p=.218)
n = 61
contingency coefficient = .294

[a]obtained frequency/expected frequency
[b]type of training
0 = no training
1 = a class
2 = a class session
3 = a seminar
4 = other

None of the 6 p values was statistically significant at the .05 level; therefore, the null hypotheses for these comparisons were retained. The results cited in Tables 11-15 indicated no associations between any independent and dependent variables.

It was hypothesized in composite null hypothesis number 4 that the difference between obtained and expected frequency distributions according to writing a Masters thesis and the review of the literature process would not be statistically significant. The literature review process was defined as 1) use of electronic indices; 2) use of print indices; 3) having someone complete a search; 4) having formal training; and 5) type of formal training. Information pertaining to composite null hypothesis number 4 was presented in Tables 16-20. The following was cited in Tables 16-20: Masters thesis, dependent variable, obtained frequencies, expected frequencies, chi square values, p values, degrees of freedom, and contingency coefficient.

Table 16

A Comparison of Completing a Masters Thesis and Use of Electronic Indices for Review of the Literature

| Masters | No | Yes |
|---|---|---|
| No | 2/3.28[a] | 38/62.30 |
| Yes | 3/4.92 | 18/29.51 |

chi square = 0.578 (df=1; p=.209)
n = 61
contingency coefficient = .159

[a]obtained frequency/expected frequency

Table 17

A Comparison of Completing a Masters Thesis and Use of Print Indices for Review of the Literature

| Masters | No | Yes |
|---|---|---|
| No | 6/9.84[a] | 34/55.74 |
| Yes | 6/9.84 | 15/24.59 |

chi square = 1.605 (df=1; p=.205)
n = 61
contingency coefficient = .160

[a]obtained frequency/expected frequency

Table 18

A Comparison of Completing a Masters Thesis and Did the Subject Have Someone Complete a Search Other than Self

| Masters | No | Yes |
|---|---|---|
| No | 18/29.51[a] | 22/36.07 |
| Yes | 12/19.67 | 9/14.75 |

chi square = 0.812 (df=1; p=.115)
n = 61
contingency coefficient = .115

[a]obtained frequency/expected frequency

Table 19

A Comparison of Completing a Masters Thesis and Did the Subject Have any Formal Training

| Masters | No | Yes |
|---|---|---|
| No | 16/26.23[a] | 24/39.34 |
| Yes | 6/9.84 | 15/24.59 |

chi square = 0.780 (df=1; p=.377)
n = 61
contingency coefficient = .112

[a]obtained frequency/expected frequency

Table 20

A Comparison of Completing a Masters Thesis and the Type of Format Training

| Masters | 0[b] | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| No | 16/26.23[a] | 12/19.67 | 11/18.03 | 0/0.00 | 1/1.64 |
| Yes | 6/9.84 | 8/13.11 | 6/9.84 | 1/1.64 | 0/0.00 |

chi square = 3.290 (*df*=4; *p*=.523)
*n* = 61
contingency coefficient = .224

[a]obtained frequency/expected frequency
[b]type of training
0 = no training
1 = a class
2 = a class session
3 = a seminar
4 = other

None of the six p values was statistically significant at the .05 level, therefore the null hypotheses for those comparisons were retained.

It was hypothesized in composite null hypothesis number 5 that the difference between obtained and expected frequency distributions according to years between completion of a masters program and commencement of the doctoral program and the review of the literature process would not be statistically significant. Information pertaining to composite null hypothesis number 5 was presented in Tables 21-25. The following was cited in Tables 21-25: years between masters and doctoral program, dependent variable, obtained frequencies, expected frequencies, chi square values, p values, degrees of freedom, and contingency coefficient.

Table 21

A Comparison of Years Between the Masters Degree and Beginning the Doctoral Program and Use of Electronic Indices for Review of the Literature

| Years | No | Yes |
|---|---|---|
| 0-4 | 5/8.20[a] | 24/39.34 |
| 5-9 | 0/0.00 | 15/24.59 |
| 10+ | 0/0.00 | 17/27.87 |

chi square = 6.010 (df=2; p=.050
n = 61
contingency coefficient = .299

[a]obtained frequency/expected frequency

Table 22

A Comparison of Years Between the Masters Degree and Beginning the Doctoral Program and Use of Print Indices for Review of the Literature

| Years | No | Yes |
|---|---|---|
| 0-4 | 4/6.563[a] | 25/40.98 |
| 5-9 | 3/4.92 | 12/19.67 |
| 10+ | 5/8.20 | 12/19.67 |

chi square = 1.656 (df=2; p=.437)
n = 61
contingency coefficient = .163

[a]obtained frequency/expected frequency

Table 23

A Comparison of Years Between the Masters Degree and Beginning the Doctoral Program and Did the Subject Have Someone Complete a Search Other than Self

| Years | No | Yes |
|---|---|---|
| 0-4 | 17/27.87[a] | 12/19.67 |
| 5-9 | 6/9.847 | 9/14.75 |
| 10+ | 7/11.48 | 10/16.39 |

chi square = 1.976 (df=2; p=.372)
n = 61
contingency coefficient = .177

[a]obtained frequency/expected frequency

Table 24

A Comparison of Years Between the Masters Degree and Beginning the Doctoral Program and Did the Subject Have Any Formal Training

| Masters | No | Yes |
|---|---|---|
| 0-4 | 8/13.11[a] | 21/34.43 |
| 4-9 | 7/11.48 | 8/13.11 |
| 10+ | 7/11.48 | 10/16.39 |

chi square = 1.828 (df=2; p=.401)
n = 61
contingency coefficient = .171

[a]obtained frequency/expected frequency

Table 25

A Comparison of Years Between the Masters Degree and Beginning the Doctoral Program and the Type of Formal Training

| Masters | 0[b] | 1 | 2 | 3 | 4[b] |
|---|---|---|---|---|---|
| 0-4 | 8/13.11[a] | 13/21.31 | 7/11.48 | 1/1.64 | 0/0.00 |
| 5-9 | 7/11.48 | 3/4.92 | 4/6.56 | 0/0.00 | 1/1.64 |
| 10+ | 7/11.48 | 4/6.56 | 6/9.84 | 0/0.00 | 0/0.00 |

chi square = 8.302 (df = 8; p = .404
n = 61
contingency coefficient = .346

[a]obtained frequency/expected frequency
[b]type of training
0 = no training
1 = a class
2 = a class session
3 = a seminar
4 = other

One of the 6 p values was statistically significant at the .05 level; therefore, the null hypothesis for this comparison was rejected. The significant comparison was for years between the masters degree and beginning the doctoral program and did the subject use electronic indices for sources in the review of the literature process. The results cited in Table 21 indicated an association between the dependent variable (years between the Masters degree

and beginning the doctoral program) and using electronic indices. An examination of the information in Table 21 indicated that all levels of years contributed to the statistically significant Chi-square.

It was hypothesized in composite null hypothesis number 6 that the difference between obtained and expected frequency distributions according to campus residency and the review of the literature process would not be statistically significant: The literature review process was defined as: 1) use of electronic indices; 2) use of print indices; 3) having someone complete a search; 4) having formal training; and 5) type of formal training. Information pertaining to composite null hypothesis number 6 was presented in Tables 25-30. The following was cited in Tables 25-30: residency, dependent variable, obtained frequencies, expected frequencies, chi square values, p values, degrees of freedom, and contingency coefficient.

Table 26

A Comparison of Residency or Non-Residency and Use of Electronic Indices for Review of the Literature

| Residency | No | Yes |
|---|---|---|
| Commute | 1/1.64[a] | 33/54.10 |
| Resident | 4/6.56 | 23/37.70 |

chi square = 2.820 (df=1; p=.093)
n = 61
contingency coefficient = .210

[a]obtained frequency/expected frequency

Table 27

A Comparison of Residency or Non-Residency and Use of Print Indices for Review of the Literature

| Residency | No | Yes |
|---|---|---|
| Commute | 8/13.11[a] | 26/42.62 |
| Resident | 4/6.56 | 23/37.70 |

chi square = 0.723 (df=1; p=.395)
n = 61
contingency coefficient = .108

[a]obtained frequency/expected frequency

Table 28

A Comparison of Residency or Non-Residency and Did the Subject Have Someone Complete a Search Other Than Self

| Residency | No | Yes |
|---|---|---|
| Commute | 15/24.59[a] | 19/31.15 |
| Resident | 15/24.59 | 12/19.67 |

chi square = 0.788 (df=2; p=.375)
n = 61
contingency coefficient = .113

[a]obtained frequency/expected frequency

Table 29

A Comparison of Residency and Non-Residency and Did the Subject Have Any Formal Training

| Residency | No | Yes |
|---|---|---|
| Commute | 12/19.67[a] | 22/36.07 |
| Resident | 10/16.39 | 17/27.87 |

chi square = 0.020 (df=2; p=.888)
n = 61
contingency coefficient = .018

[a]obtained frequency/expected frequency

Table 30

A Comparison of Residency and Non-Residency and the Type of Formal Training

| University | 0 | 1 | 2 | 3 | 4[b] |
|---|---|---|---|---|---|
| Commute | 12/19.67[a] | 10/16.39 | 11/18.03 | 0/0.00 | 1/1.64 |
| Resident | 10/16.39 | 10/16.39 | 6/9.84 | 1/1.64 | 0/0.00 |

chi square = 2.887 (df = 4; p = .577
n = 61
contingency coefficient = .213

[a]obtained frequency/expected frequency
[b]type of training
0 = no training
1 = a class
2 = a class session
3 = a seminar
4 = other

None of the 6 p values was statistically significant at the .05 level; therefore, the null hypotheses for these comparisons were retained. The results cited in Tables 26-30 indicated no association between any independent and dependent variables.

It was hypothesized in composite null hypothesis number 7 that the differences among mean ratings of index scores according to gender, program of study and years between masters and doctorate would not be statistically significant. The mean ratings of index scores are reported

for both print indexes which had three or more responses and electronic indexes which had three or more responses. Information pertaining to composite null hypothesis number 7 was presented in Table 31. The following was cited in Table 31: variables, sample sizes, means, standard deviations, F values, and p levels.

Table 31

A Comparison of Mean Ratings of Index Scores According to Gender, Program of Study and Years Between Masters and Doctorate Employing a Three-Way Analysis of Variance

| Variable | n | M[a] | F value | p level |
|---|---|---|---|---|
| | | Print Indexes | | |
| Gender (A) | | | | |
| Female | 34 | 1.0980 | 0.21 | .6527 |
| Male | 27 | 1.0568 | | |
| Program[b] (B) | | | | |
| Curriculum | 19 | 1.1579 | | |
| Special Ed | 10 | 0.7833 | | |
| Counseling | 9 | 0.6667 | 0.61 | .6569 |
| Adult Ed. | 9 | 1.1296 | | |
| Educ. Adm. | 14 | 1.2262 | | |
| Years (C) | | | | |
| 0-4 | 29 | 1.0057 | | |
| 5-9 | 15 | 0.9667 | 0.35 | .7054 |
| 10+ | 17 | 1.1471 | | |
| | | Interactions | | |
| A X B | | | 0.19 | .9418 |
| A X C | | | 0.18 | .8350 |
| B X C | | | 0.88 | .5430 |
| A X B X C | | | 1.36 | .2702 |

(continued)



BEST COPY AVAILABLE

Table 31 (continued)

| Variable | n | M[a] | F value | p level |
|---|---|---|---|---|
| | | Electronic Indexes | | |
| Gender (A) | | | | |
| Female | 34 | 0.8203 | 0.15 | .7023 |
| Male | 27 | 0.7695 | | |
| Program[b] (B) | | | | |
| Curriculum | 19 | 0.6316 | | |
| Special Ed | 10 | 0.9333 | | |
| Counseling | 9 | 0.9136 | 0.86 | .4960 |
| Adult Ed. | 9 | 0.9012 | | |
| Educ. Adm. | 14 | 0.7857 | | |
| Years (C) | | | | |
| 0-4 | 29 | 0.7088 | | |
| 5-9 | 15 | 0.6444 | 2.99 | .0629 |
| 10+ | 17 | 1.0850 | | |
| Interactions | | | | |
| A X B | | | 2.15 | .0941 |
| A X C | | | 2.14 | .1326 |
| B X C | | | 2.11 | .0599 |
| A X B X C | | | 1.09 | .3645 |

[a] M possible scores were 1-7

[b] Program
Curriculum = curriculum, visual education, music education, physical education
Special Ed. = special education
Counseling = educational psychology, school psychology, student counseling, counseling and psychology
Adult Ed. = adult education and higher education
Educ. Adm. = educational administration

None of the 14 p values was statistically significant at the .05 level; therefore, the null hypotheses for these comparisons were retained. The results cited in Table 31 indicated no association between any independent and dependent variables.

It was hypothesized in composite null hypothesis number 8 that the differences among mean ratings of index scores according to gender, program of study and residency would not be statistically significant. The mean ratings of index scores were reported for both print indexes which had three or more responses and electronic indexes which had three or more responses. Information pertaining to composite null hypothesis number 8 was presented in Table 32. The following was cited in Table 32: variables, sample sizes, means, standard deviations, F values, and p levels.

Table 32

A Comparison of Mean Ratings of Index Scores According to Gender, Program of Study and Residency Employing a Three-Way Analysis of Variance

| Variable | n | M[a] | F value | p level |
|---|---|---|---|---|
| | | Print Indexes | | |
| Gender (A) | | | | |
| Female | 34 | 1.0980 | 0.19 | .6644 |
| Male | 27 | 0.9568 | | |
| Program[b] (B) | | | | |
| Curriculum | 19 | 1.1579 | | |
| Special Ed | 10 | | | |
| Counseling | 9 | | 0.57 | .6881 |
| Adult Ed. | 9 | 1.1296 | | |
| Educ. Adm. | 14 | 1.2262 | | |
| Residency (D) | | | | |
| Resident | 27 | 1.0062 | 0.01 | .9411 |
| Commute | 34 | 1.0588 | | |
| Interactions | | | | |
| A X B | | | 0.21 | .9333 |
| A X D | | | 0.37 | .5488 |
| B X D | | | 0.09 | .9839 |
| A X B X D | | | 0.39 | .6825 |

(continued)

Table 32 (continued)

| Variable | n | M | F value | p value |
|---|---|---|---|---|
| | | Electronic Indexes | | |
| Gender (A) | | | | |
| Female | 34 | .8201 | 0.12 | .7305 |
| Male | 27 | .7695 | | |
| Program** (B) | | | | |
| Curriculum | 19 | .6316 | | |
| Special Ed | 10 | .9333 | | |
| Counseling | 9 | .9136 | 0.70 | .5975 |
| Adult Ed. | 9 | .9012 | | |
| Educ. Adm. | 14 | .7857 | | |
| Residency (D) | | | | |
| Resident | 27 | .8889 | 1.09 | .3013 |
| Commute | 34 | .6831 | | |
| | Interactions | | | |
| A X B | | | 1.40 | .3013 |
| A X D | | | 1.40 | .4551 |
| B X D | | | 2.18 | .0878 |
| A X B X D | | | 0.92 | .4051 |

[a] M possible scores were 1-7

[b] Program

Curriculum = curriculum, visual education, music education, physical education

Special Ed. = special education

Counseling = educational psychology, school psychology, student counseling, counseling and psychology

Adult Ed. = adult education and higher education

Educ. Adm. = educational administration

None of the 14 p values was statistically significant at the .05 level; therefore, the null hypotheses for these comparisons were retained. The results cited in Table 32 indicated no association between any independent and dependent variables.

It was hypothesized in composite null hypothesis number 9 that the differences among mean ratings of index scores according to gender, years between the masters and doctorate program and residency would not be statistically significant. The mean ratings of index scores were reported for both print indexes which had three or more responses and electronic indexes which had three or more responses. Information pertaining to composite null hypothesis number 9 was presented in Table 33. The following was cited in Table 33: variables, sample sizes, means, standard deviations, F values, and p levels.

Table 33

A Comparison of Mean Ratings of Index Scores According to Gender, Years Between Masters and Doctorate and Residency Employing a Three-Way Analysis of Variance

| Variable | n | M[a] | F value | p level |
|---|---|---|---|---|
| | | Print Indexes | | |
| Gender (A) | | | | |
| Female | 34 | 1.0980 | 0.23 | .6354 |
| Male | 27 | 0.9568 | | |
| Years (C) | | | | |
| 0-4 | 19 | 1.0057 | | |
| 5-9 | 15 | 0.9667 | 0.09 | .9128 |
| 10+ | 17 | 1.1471 | | |
| Residency (D) | | | | |
| Resident | 27 | 1.0062 | 0.10 | .9226 |
| Commute | 34 | 1.0588 | | |
| | Interactions | | | |
| | A X C | | 0.28 | .7581 |
| | A X D | | 0.20 | .6580 |
| | C X D | | 0.95 | .3932 |
| | A X B X D | | 2.47 | .0940 |

(continued)

Table 33 (continued)

| Variable | n | M[a] | F value | p level |
|---|---|---|---|---|
| | | Electronic Indexes | | |
| Gender (A) | | | | |
| Female | 34 | .8203 | 0.12 | .7321 |
| Male | 27 | .7695 | | |
| Years (C) | | | | |
| 0-4 | 19 | 0.7088 | | |
| 5-9 | 15 | 0.6444 | 2.98 | .0601 |
| 10+ | 17 | 1.0850 | | |
| Residency (D) | | | | |
| Resident | 27 | 0.6831 | 1.62 | .2089 |
| Commute | 34 | 0.8889 | | |
| Interactions | | | | |
| A X C | | | 0.98 | .3808 |
| A X D | | | 0.35 | .5588 |
| C X D | | | 1.66 | .2007 |
| A X C X D | | | 0.23 | .7993 |

[a] M possible scores were 1-7.

None of the 14 p values was statistically significant at the .05 level; therefore, the null hypotheses for these comparisons were retained. The results cited in Table 33 indicted no association between any independent and dependent variables.

It was hypothesized in composite null hypothesis number 10 that the differences among mean ratings of index scores according to program of study, years between the masters and doctorate program and residency would not be statistically significant. The mean ratings of index scores were reported for both print indexes which had three or more responses and electronic indexes which had three or more responses. Information pertaining to composite null hypothesis number 10 was presented in Table 34. The following was cited in Table 34: variables, sample sizes, means, standard deviations, F values, and p level.

Table 34

A Comparison of Mean Ratings of Index Scores According to Program of Study, Years Between Masters and Doctorate and Residency Employing a Three-Way Analysis of Variance

| Variable | n | M[a] | F value | p level |
|---|---|---|---|---|
| | | Print Indexes | | |
| Program[b] (B) | | | | |
| Curriculum | 19 | 1.1579 | | |
| Special Ed. | 10 | 0.7833 | | |
| Counseling | 9 | 0.6667 | 0.44 | .7763 |
| Adult Ed. | 9 | 1.1296 | | |
| Educ. Adm. | 14 | 1.2262 | | |
| Years (C) | | | | |
| 0-4 | 29 | 1.0057 | | |
| 5-9 | 15 | 0.9667 | 0.41 | .6671 |
| 10+ | 27 | 1.1471 | | |
| Residency (D) | | | | |
| Resident | 27 | 1.0062 | | |
| | | | 0.01 | .9136 |
| Commute | 34 | 1.0588 | | |
| Interactions | | | | |
| B X C | | | 0.96 | .4781 |
| B X D | | | 0.03 | .9983 |
| C X D | | | 0.93 | .4047 |
| B X C X D | | | 0.18 | .9119 |

(continued)

Table 34 (continued)

| Variable | n | M* | F value | p level |
|---|---|---|---|---|
| | | Electronic Indexes | | |
| Program[b] (B) | | | | |
| Curriculum | 19 | 0.6316 | | |
| Special Ed | 10 | 0.9333 | | |
| Counseling | 9 | 0.9136 | 0.81 | .5268 |
| Adult Ed | 9 | 0.9012 | | |
| Educ. Adm. | 14 | 0.7857 | | |
| Years* (C) | | | | |
| 0-4 | 29 | 0.7088 | | |
| 5-9 | 15 | 0.6444 | 2.74 | .0782 |
| 10+ | 17 | 1.0850 | | |
| Residency (D) | | | | |
| Resident | 27 | 0.6831 | 1.12 | .2971 |
| Commute | 34 | 0.8889 | | |
| Interactions | | | | |
| B X C | | | 1.82 | .1047 |
| B X D | | | 2.11 | .0994 |
| C X D | | | 0.22 | .8031 |
| B X C X D | | | 0.79 | .5096 |

[a] M possible scores were 1-7.

[b] Program
Curriculum = curriculum, visual education, music education, physical education
Special Ed. = special education
Counseling = educational psychology, school psychology, student counseling, counseling and psychology
Adult Ed. = adult education and higher education
Educ. Adm. = educational administration



BEST COPY AVAILABLE

None of the 14 p values was statistically significant at the .05 level; therefore, the null hypotheses for these comparisons were retained. Results cited in Table 34 indicated no association between any independent and dependent variables.

It was hypothesized in composite null hypothesis 11 that the differences among mean ratings of index scores according to university attended, completion of a masters thesis and residency would not be statistically significant. The mean ratings of index scores were reported for both print indexes which had three or more responses and electronic indexes which had three or more responses. Information pertaining to composite null hypothesis number 11 was presented in Table 35. The following was cited in Table 35: variables, sample sizes, means, standard deviations, F values, and p level.

Table 35

A Comparison of Mean Ratings of Index Scores According to University Attended, Completion of a Masters Thesis and Residency Employing a Three-Way Analysis of Variance

| Variable | n | M[a] | F value | p level |
|---|---|---|---|---|
| | | Print Indexes | | |
| University (E) | | | | |
| KSU | 35 | 1.1095 | 0.33 | .5683 |
| KU | 26 | 0.9359 | | |
| Masters Thesis (F) | | | | |
| Yes | 21 | 0.8968 | 0.28 | .5974 |
| No | 40 | 1.1083 | | |
| Residency (D) | | | | |
| Resident | 27 | 1.0062 | 0.00 | .9458 |
| Commute | 34 | 1.0588 | | |
| Interactions | | | | |
| E X F | | | 0.71 | .4036 |
| E X D | | | 0.00 | .9529 |
| F X D | | | 0.77 | .3843 |
| E X F X D | | | 0.03 | .8558 |

(continued)

Table 35 (continued)

| Variable | n | M[a] | F value | p level |
|---|---|---|---|---|
| | | Electronic Indexes | | |
| University (E) | | | | |
| KSU | 35 | 0.8603 | 0.93 | .3386 |
| KU | 26 | 0.7137 | | |
| Masters Thesis (F) | | | | |
| Yes | 21 | 0.7566 | 0.02 | .8971 |
| No | 40 | 0.8194 | | |
| Residency (D) | | | | |
| Resident | 27 | 0.6831 | 1.60 | .2116 |
| Commute | 34 | 0.8889 | | |
| Interactions | | | | |
| E X F | | | 0.32 | .5712 |
| E X D | | | 0.87 | .3564 |
| F X D | | | 2.09 | .1539 |
| E X F X D | | | 0.77 | .3843 |

[a]M possible scores are 1-7.

None of the 14 p values was statistically significant at the .05 level; therefore, the null hypotheses for these comparisons were retained. Results cited in Table 35 indicated no association between any independent and dependent variables.

## Discussion

The researcher investigated the literature review process of educational doctoral students at the Unviersity of Kansas and Kansas State University. The independent variables investigated were gender, program of study, university attended, Masters thesis written, years between completion of a masters program and commencement of the doctoral program, and campus residency while engaged in the review of the literature process. The dependent variables were computer indices used, print indices used, scores from scales of usefulness of print indices, scores of scales for usefulness of computer indices, methods for learning how to use indices, and formal training in how to do a review of the literature. The sample consisted of 61 subjects with 35 from Kansas State University and 26 from the University of Kansas. Eleven composite null hypotheses were tested. The researcher made a total of 70 comparisons plus 30 recurring comparisons. Of the 70 comparisons 40 were main effects and 30 were interactions.

Of the 40 main effects, two were statistically significant at the .05 level. The significant main effects were: 1) years between masters and doctoral program and using electronic indices; and 2) gender and having someone other than the subject complete a computer search.

Of the 30 interactions none was statistically significant at the .05 level.

Although not statistically significant 5 comparisons, 3 main effects and 2 interactions, were approaching the .05 level. The 3 main effects included: 1) years between masters and doctoral program when employed with program of study and gender and the dependent variable electronic indexes (p value = .0629); 2) years between masters and doctoral program when employed with gender and residency and the dependent variable electronic indexes (p value = .0601); 3) years between masters when employed with program of study and residency and doctoral program and the dependent variable electronic indexes (p value = .0782). The 2 interactions were: 1) program of study with years between masters and doctoral program for electronic indexes when gender was the third independent variable (p value = .0599) and 2) program of study with residency for electronic indexes (p value = .0978). If the .10 level of significance had been employed, the null hypotheses for these comparisons could have been rejected.

The results of the present study indicated a possible association with the researcher's examination of the textbook treatment and discussion of the literature review process relative to electronic indexes. The textbooks revealed an absence of discussion related to electronic

indexes. This absence may have contributed to the incidence of statistically significant or approaching statistically significant comparisons.

The Siitonen (1984), Teitelbaum-Kronish (1984), and Walker (1988) studies could not conclusively identify characteristics that significantly affect online database searching. The present study would support that the characteristics or factors presented do not conclusively affect electronic index use.

Belanger and Hoffman (1990) studied factors of age, gender, level of computer familiarity and level of study relative to frequency of use of ERIC on CD-ROM. Although the present study did not replicate Belanger and Hoffman (1990) the factors of gender and age, indirectly through years between masters and doctoral program, were studied. The present study contained significant comparisons associated with gender and age (years). Also four of the five comparisons which were approaching significance at the .05 level were age (years) related.

The results of the study appeared to support the following generalizations:

1. there is an association between gender and having someone else complete a search;
2. there is an association between years between completion of a Masters degree and commencement of

a doctoral program and using electronic indices;

3. there is no association between program of study and the literature review process;
4. there is no association between university attended and the literature review process;
5. there is no association between writing a Masters thesis and the literature review process; and
6. there is no association between campus residency and the literature review process.

The results of the study appeared to support the following implications:

1. librarians and faculty should be aware that age may affect the review of literature process of doctoral students;
2. librarians and faculty should be aware that the program of study may affect the review of literature process of doctoral students in education;
3. librarians should be aware that the presence and availability of electronic indexes may affect doctoral students and the review of literature process.

The researcher recommends that further study be conducted to determine if the independent variables

influence the review of the literature process. In order to accomplish this the following recommendations should be considered:

1. replication of the study with a larger sample;
2. replication of the study at other doctoral granting institutions; and
3. modify the survey instrument in the following manner:
   a. ask which area of study the respondent studied and list the areas;
   b. list the print indices and ask for a 1-7 rating;
   c. list the electronic indices and ask for a 1-7 rating.

References

Allen, G. (1990). Database selection by patrons using CD-ROM. College & Research Libraries, 51(1), 103-111.

Allen, G. (1989). Patron response to bibliographic databases on CD-ROM. RQ, 29(1), 103-111.

Beaubien, A. K., Hogan, S. A., & George, M. W. (1982). Learning the library: Concepts and methods for effective bibliographic instruction. New York: Bowker.

Belanger, A., & Hoffman S. D. (1990). Factors related to frequency of use of CD-ROM: A study of ERIC in an academic library. College & Research Libraries, 51(2), 153-162.

Best, J. W., & Kahn, J. V. (1989). Research in education (6th ed.). Englewood Cliffs, New Jersey: Prentice Hall.

Borg, W. R., & Gall, M. D. (1989). Educational research an introduction (5th ed.). New York: Longman.

Borg, W. R., & Gall, M. D. (1983). Educational research an introduction (4th ed.). New York: Longman.

Bradigan, P. S., Kroll, S. M. & Sims, S. R. (1987). Graduate student bibliographic instruction at a large university: A workshop approach. RQ, 26(3), 335-340.

Campbell, D. T., & Stanley, J. C. (1963). Experimental and quasi-experimental designs for research. Chicago: Rand McNally.

Carlson, D., & Miller, R. H. (1984). Librarians and teaching faculty: Partners in bibliographic instruction. College and Research Libraries, 45(6), 483-491.

Dreifuss, R. A. (1981). Library instruction and graduate students: More work for George. RQ, 21(2), 121-123.

Eichelberger, R. T. (1989). Disciplined inquiry understanding and doing educational research. New York: Longman.

Fernberg, M. G. (1983). Library orientation for business students: A case study. College and Research Libraries News, 44(1), 114-115.

Harter, S. P., & Jackson, S. M. (1988). Optical disc systems in libraries: Problems and issues. RQ, 27, 516-527.

Hopkins, C. D., & Antes, R. L. (1990). Educational research a structure for inquiry (3rd ed.). Itasca, Illinois: F.E. Peacock Publishers, Inc.

Ishaq, M. R., & Cornick, D. P. (1978). Library and research consultations (LaRC): A service for graduate students. RQ, 18(2), 168-176.

Kansas State University bulletin 1990-92. (1990, June). 74(3). Manhattan, Kansas.

Kazlauskas, D. W. (1987). Bibliographic instruction at the graduate level: A study of methods. University of North Florida. (ERIC Document Reproduction Service No. ED 311 932).

Kleiner, J. P. (1987). InfoTrac: An evaluation of system use and potential in research libraries. RQ, 27(4), 252-263.

LePoer, P. M., & Mularski, C. A. (1989). CD-ROMs impact on libraries and users. The Laserdisk Professional, 2(4), 39-45.

Littlejohn, A. C. (1987). End-user searching in an academic library-the students' view. RQ, 26(4), 460-466.

Lubans, J., Jr. (1980). Let George do it. RQ, 20(2), 121-123.

Maciuszko, K. L. (1987). Hardcopy versus online searching: A study in retrieval effectiveness (Doctoral dissertation, Case Western Reserve University, 1987). Dissertation Abstract International, 49, 04-A.

Madland, D. (1985). Library instruction for graduate students. College Teaching, 33(4), 163-164.

Mason, E. J., & Bramble, W. J. (1989). Understanding and conducting research applications in education and the behavioral sciences (2nd ed.). New York: McGraw-Hill.

Miller, W. (1989). General education, graduate education, and instruction in the use of libraries. In Maureen Pastine & Bill Katz (Eds.), Integrating library use skills into the general education curriculum (pp. 245-255). New York: Hawthorne Press.

Nelson, N. M. (1990). CD-ROM roundup. Library Journal, 115, 45-50.

Nissley, M., Anderson, P., & Gaal, P. (1989). ROMping through ERIC: Measuring satisfaction and effectiveness. The Laserdisk Professional, 2(1), 95-100.

Osburn, C. B. (1979). Academic research and library resources: Changing patterns in America. Westport, Connecticut: Greenwood Press.

Penhale, S. J., & Taylor, N. (1986). Integrating end-user searching into a bibliographic instruction program. RQ, 27(2), 212-220.

Schobert, T. (1982). Term-paper counseling: Individualized bibliographic instruction. RQ, 22(2), 146-151.

Shill, H. B. (1987). Bibliographic instruction: Planning for the electronic information environment. College and Research Libraries, 48(5), 433-453.

Sieburth, J. F. (1988). Online search services in the academic library: Planning, management, and operation. Chicago: American Library Association.

Siitonen, L. (1984). Online searching: Relationships between online end users/search behavior, their search results and their satisfaction with search results. (Doctoral dissertation, University of Pittsburg, 1984). Dissertation Abstracts International, 46, 04-A.

Steffey, R. J., & Meyer, N. (1989). Evaluating user success and satisfaction with CD-ROM. The Laserdisk Professional, 2(6), 35-45.

Stewart, L., & Olsen, J. (1988). Compact disk databases: Are they good for users? Online, 12(3), 48-52.

Subject guide to books in print 1989-90. (1989). (Vol. 2). New York: R.R. Bowker.

Teitelbaum-Kronish, P. (1984). Relationship of selected cognitive aptitudes and personality characteristics of the online searcher to the quality of performance in online bibliographic retrieval. (Doctoral dissertation, New York University, 1984). Dissertation Abstract International, 46, 12-A.

Thomas, J. (1984). The university faculty and library instruction. RQ, 23(4), 431-437.

University of Kansas bulletin: Graduate school catalog 1989-91. (1989, October 30). 90,(5). Lawrence, Kansas.

Walker, M. G. P. (1988). A comparative evaluation and analysis of end-user search performance in an academic environment. (Doctoral dissertation, Syracuse University, 1988). Dissertation Abstract International. 50, O2-A.

Whitaker, C. S. (1990). Pile-up at the reference desk: Teaching users to use CD-ROMS. The Laserdisk Professional, 3(3), 30-34.

Zaporozhetz, L. E. (1987). The dissertation literature review: How faculty advisors prepare their doctoral candidates. Dissertation, University of Oregon. (ERIC Document Reproduction Service No. ED 303 131) O2-A.

# APPENDIX A

## Telephone Survey

Telephone Survey

Gender: University Granting Degree:
Program: Advisor:

1. When conducting your literature review did you use any computer indices?
   If yes, what did you use?

2. What print indices did you use?

3. On a scale of 1-7 with 1 being of no use and 7 being the most useful, how useful was XXXXX (reiterate each index from question 1 and 2)?

4. How did you decide what search terms to use?

5. How did you learn to use the indices you used?

6. Did you have someone do a computer search for you?
   If yes, who?

7. Did the search provide usable citations?
   If yes, approximately how many?

8. Did you have any formal training in how to do a review of the literature?
   If yes, what was it?

9. On a scale of 1-7 how familiar are you with XXXX? The researcher will list 5 indices, 3 will be actual indices and 2 will be fictitious indices.

10. Did your masters program require a thesis?

11. After completing your masters degree how many years elapsed before you began your doctoral program?

12. While working on your review of the literature were you in residency at campus or did you commute?

13. What would have helped you when completing your doctoral review of literature?

# APPENDIX B

## Standardized Form for Survey

Standardized Form for Survey

Code:

Gender: _____Male _____Female

Program of Study:

_____a. Educational Administration

_____b. Special Education

_____c. Adult Education

_____d. Curriculum and Instruction

_____e. Educational Psychology

_____f. Student Counseling and Personnel Services

University Attended:

_____a. Kansas State University

_____b. University of Kansas

Questions:

1. When conducting your literature review did you use any computer indices?

_____Yes _____No

If YES, what did you use?

Rating 1-7

_____ 1.

_____ 2.

_____ 3.

_____ 4.

_____ 5.

_____ 6.

2. What print indices did you use?

Rating 1-7

_____ 1.

_____ 2.

_____ 3.

_____ 4.

_____ 5.

_____ 6.

3. On a scale of 1-7 with 1 being of no use and 7 being the most useful how useful was (refer to question 1 and 2):

4. How did you decide what search terms to use? (Definition of search term=subject or subject did you look for)

5. Did you have someone do a computer search for you?

_____ Yes _____ No

If YES, who?

_____ Librarian

_____ Friend

_____ Professor

_____ Other

6. Did you have any formal training in how to do a review of the literature? (Definition of formal training=class, workshop, one class session in the library)

_____ Yes _____ No

If YES, what was it?

_____ Class

_____ One class session

_____ Seminar

_____ Other

9. On a scale of 1-7 how familiar are you with the following. 1 is not familiar at all and 7 is very familiar.

Rating

_____ Education Index

_____ Moody's Guide to Educational Literature*

_____ Dissertation Abstracts

_____ Current Index to Journals in Education

_____ National Teachers Index*

10. Did your masters program require a thesis?

_____ Yes _____ No

11. After completing your masters degree how many years elapsed before you began your doctoral program?

_____ years

12. While working on your review of the literature were you in residency at campus or did you commute?

_____ Residency

_____ Commute

13. What would have helped you when completing your doctoral review of the literature?

14. Would you be willing to review the draft copy of my handbook for usability?

_____ Yes

_____ No

# APPENDIX C

## Letter to Graduate Offices

January 25, 1991
1311 Western Plains
Hays, KS 67601

Graduate Studies Office
Attention: Ms. Polly Hardin, Office Supervisor
102 Bailey Hall
Kansas University
Lawrence, KS

Dear Ms. Hardin:

I am presently a doctoral candidate at Kansas State University in the College of Education, Educational Administration program. On Thursday, January 17, 1991 I defended my dissertation proposal and it was accepted by the graduate committee. A component of the data gathering in the proposed research design is a telephone survey of 1990 students who were granted doctoral degrees in education from Kansas universities.

I would like to obtain from your office the following information so that I can successfully complete this component of my doctoral research:

A list of students who were granted doctoral degrees from January 1990 through December 1990. Associated with this list, I need:

- name of student
- permanent address of student
- permanent phone number(s) of student
- date degree granted
- program of study, i.e. educational administration counseling, adult education, etc.

Please feel free to call me if you have questions regarding this request (913-628-4342 daytime phone). If there is any charge associated with obtaining this information, please let me know.

Thank you very much in advance for your assistance in this matter.

Sincerely,

Karen Cole
(913) 628-4342 daytime phone

January 25, 1991
1311 Western Plains
Hays, KS 67601

Graduate Studies Office
Attention: Paul Burden
017 Bluemont Hall
Kansas State University
Manhattan, KS

Dear Mr. Burden:

I am presently a doctoral candidate at Kansas State University in the College of Education, Educational Administration program. On Thursday, January 17, 1991 I defended my dissertation proposal and it was accepted by the graduate committee. A component of the data gathering in the proposed research design is a telephone survey of 1990 students who were granted doctoral degrees in education from Kansas universities.

I would like to obtain from your office the following information so that I can successfully complete this component of my doctoral research:

A list of students who were granted doctoral degrees from January 1990 through December 1990. Associated with this list, I need:

- name of student
- permanent address of student
- permanent phone number(s) of student
- date degree granted
- program of study, i.e. educational administration counseling, adult education, etc.

Please feel free to call me if you have questions regarding this request (913-628-4342 daytime phone). If there is any charge associated with obtaining this information, please let me know.

Thank you very much in advance for your assistance in this matter.

Sincerely,

Karen Cole
(913) 628-4342 daytime phone

# APPENDIX D

## Letter to Subjects

1311 Western Plains
Hays, KS 67601
March 1, 1991

John Doe
123 Somewhere Street
Anywhere, USA

Dear John:

I am in the process of collecting data to complete both my Specialist's in Education thesis and Doctoral dissertation. I am aware that you completed your doctoral work in 1990. My research is focusing on graduate students in education and Chapter 2 or review of the literature. Since I am presently employed as a librarian at Fort Hays State University, I have been concerned with the phenomena known as "research process". With the tremendous proliferation of electronic databases/indices that are appearing in university libraries, the staff and myself have observed a mixture of both awe and frustration.

My research projects are focusing on what doctoral students in education use as well as what the "experts" recommend what should be used when proceeding through the review of the literature process. My ultimate goal is to prepare a handbook for those of us in education that provides information on what is available and how to use it.

The purpose of this letter is to ask for your help in collecting information regarding the review of the literature process from recent graduates. I have enclosed a copy of the questions I would like to ask you via a telephone interview the week of April 1. I want to assure you that you answers will be kept anonymous and that in no way does this affect your recent degree.

In advance I would like to thank you for your assistance in this research project.

Sincerely,

Karen Cole
(913) 628-4342

# APPENDIX E

## Postcard Enclosed in First Letter

Postcard

---

No._____

Please check all that would be an appropriate time for a telephone call. I appreciate your help with my doctoral study.

Day of week:
_____ Monday
_____ Tuesday
_____ Wednesday
_____ Thursday
_____ Friday
_____ Saturday
_____ Sunday

Time of day: ___ morning ___ afternoon ___ evening

Phone number where I can contact you:

( )_____

---

The reverse side of the stamped postcard had the return address printed on it.

APPENDIX F

Second Letter and Postcard

1311 Western Plains
Hays, KS 67601
April 19, 1991

Name
Address
City, State

Dear Name:

I wrote you on March 15 asking for your help! If your desk looks like my desk and you get the annual rush of surveys and questionnaires, I would guess you pitched the letter and postcard.

That is why I'm writing again--asking for your help. As a 1990 graduate of KU or KSU you are in the unique position of giving a helping hand. Gathering information from you related to how you dealt with the writing of your dissertation is what I need. The telephone survey will take only 5-10 minutes of your time.

The purpose of this letter is to ask you again for your help in collecting information regarding your research process. I have enclosed a copy of the questions I would like to ask you via a telephone interview the week of May 6.

I have enclosed a post card that I'm asking you to return with a phone number, a preferred time of day and day of the week to contact you. I want to assure you that your answers will be kept anonymous and that in no way does this affect your recent degree.

In advance I would like to thank you for your assistance in this research project.

Sincerely,

Karen Cole
(913) 628-4342

Postcard

No._____

Please check all that would be an appropriate time for a telephone call. I appreciate your help with my doctoral study.

Day of week:
_____ Monday
_____ Tuesday
_____ Wednesday
_____ Thursday
_____ Friday
_____ Saturday
_____ Sunday

Time of day: ___ morning ___ afternoon ___ evening

Phone number where I can contact you:

( )_____

The reverse side of the stamped postcard had the return address printed on it.

Telephone Survey

1. When conducting your literature review did you use any computer indices?
   If yes, what did you use?

2. What print indices did you use?

3. On a scale of 1-7 with 1 being of no use and 7 being the most useful, how useful were the indices from questions 1 and 2?

4. How did you decide what search terms to use?

5. How did you learn to use the indices you used?

6. Did you have someone do a computer search for you?
   If yes, who?

7. Did the search provide usable citations?
   If yes, approximately how many?

8. Did you have any formal training in how to do a review of the literature?
   If yes, what was it?

9. Did your masters program require a thesis?

10. After completing your masters degree how many years elapsed before you began your doctoral program?

11. While working on your review of the literature were you in residency at campus or did you commute?

12. What would have helped you when completing your doctoral review of literature?

*Indices: a reference tool which serves as a guide to books, journal articles, dissertations, etc. on a particular subject. Examples of indices would be Reader's Guide to Periodical Literature, MLA Bibliography, and Historical Abstracts.

# APPENDIX G

## Indices Reported with Frequencies

Print Indices

| Title | Frequency |
|---|---|
| CIJE (Current Index to Journals in Education) | 18 |
| Dissertation Abstracts | 15 |
| Education Index | 14 |
| RIE (Resources in Education) | 11 |
| Psychological Abstracts | 12 |
| Reader's Guide to Periodical Literature | 8 |
| Index Medicus | 2 |
| Physical Education Index | 2 |
| Exceptional Child Index | 1 |
| Chemical Abstracts | 1 |
| Social Science Citation Index | 2 |
| Print Bibliographies from Articles Read | 1 |
| K-State Dissertations Index | 1 |
| Educational Administration Abstracts | 1 |
| Business Education Index | 1 |
| American Doctoral Dissertations | 1 |
| Sociological Abstracts | 2 |
| Books in Print | 2 |
| GPO Monthly Catalog | 2 |
| New York Times Index | 1 |
| Government Documents Index | 1 |
| Business Periodicals Index | 1 |
| Contemporary Authors Index | 1 |
| Music Index | 1 |
| MLA (Modern Language Association) Bibliography | 1 |
| Historical Abstracts | 1 |
| Contemporary Literary Criticism | 1 |
| NCTE Guides | 1 |
| Review of Educational Research | 1 |

Electronic Indices

| Title | Frequency |
|---|---|
| ERIC - CD | 40 |
| ERIC - online | 15 |
| PsychLit - CD | 10 |
| DIAGLOG | 7 |
| Sociological Abstracts - CD | 4 |
| Dissertation Abstracts - online | 4 |
| PsychLit - online | 3 |
| Dissertation Abstracts - CD | 3 |
| Business Periodicals Index | 3 |
| Chemical Abstracts - CD | 1 |
| Chemical Abstracts - online | 1 |
| MEDLINE - CD | 2 |
| MEDLINE - online | 2 |
| Education Index - online | 1 |
| Education Index - CD | 1 |
| GPO - CD | 1 |
| Monthly Catalog | 1 |
| CINAHL - CD | 1 |
| Online Public Catalog | 2 |
| Harvard Business - online | 1 |
| ABInform - online | 1 |
| ABInform - CD | 1 |
| WesLaw - online | 1 |
| Arizona Educational Information | 1 |
| Books in Print - CD | 1 |
| Reader's Guide to Periodical Literature - CD | 2 |
| Humanities Index - CD | 1 |
| CAM - CD | 1 |